

**CLAIMS**

What is claimed is:

- 1        1. A method for counteracting lens vignetting, comprising:
  - 2            resetting pixels of an image sensor; and
  - 3            reading pixels of the image sensor after they have been reset such that the time
  - 4            between resetting and reading is greater for pixels adjacent edges of the sensor than
  - 5            for pixels adjacent a center of the sensor.
  
- 1        2. The method of claim 1, wherein resetting pixels comprises resetting  
2        pixels on a line-by-line basis across the image sensor.
  
- 1        3. The method of claim 2, wherein resetting pixels further comprises  
2        resetting pixels beginning from one edge of the sensor and ending at an opposite edge  
3        of the sensor.
  
- 1        4. The method of claim 2, wherein resetting pixels further comprises  
2        resetting pixels beginning from the center of the sensor and ending at opposite edges  
3        of the sensor.
  
- 1        5. The method of claim 1, wherein resetting pixels comprises resetting all  
2        sensor pixels at substantially the same time.

1           6.     The method of claim 1, wherein reading pixels comprises reading  
2     pixels beginning from one edge of the sensor and ending at an opposite edge of the  
3     sensor.

1           7.     The method of claim 1, wherein reading pixels comprises reading  
2     pixels beginning from the center of the sensor and ending at opposite edges of the  
3     sensor.

1           8.     The method of claim 1, wherein reading pixels comprises reading  
2     pixels such that pixel exposure time increases as a function of distance from the center  
3     of the sensor.

1           9.     The method of claim 1, wherein reading pixels comprises reading  
2     pixels such that reading of pixels spaced from the center of the sensor is delayed  
3     relative to reading of pixels adjacent the center of the sensor so that exposure time for  
4     the pixels spaced from the center of the sensor is greater than for pixels adjacent the  
5     center of the sensor.

1           10.    The method of claim 1, wherein reading pixels comprises reading  
2     selected pixels of selected lines so as to form a curved read line representative of  
3     progression of pixel reading across the sensor.

1           11.    The method of claim 1, wherein reading pixels comprises reading  
2     pixels such that pixels are reset and read with a varying relative speed of progression.

1           12. The method of claim 11, wherein reading pixels further comprises  
2       resetting pixels at a constant reset rate and adjusting the speed at which pixels are read  
3       such that a pixel reading rate is higher adjacent the center of the sensor as compared  
4       to adjacent edges of the sensor.

1           13. The method of claim 1, wherein pixels are reset and read such that  
2       exposure times are increased for the sensor pixels as a function of their distance from  
3       the center of the sensor in both a horizontal and a vertical direction.

1           14. The method of claim 1, wherein reading pixels comprises reading  
2       pixels beginning at the center of the image sensor and spiraling outward so that pixels  
3       adjacent the center of the sensor are read first and pixels adjacent edges of the sensor  
4       are read last.

1        15. A method for counteracting lens vignetting, comprising:  
2            resetting pixels of an image sensor in a line-by-line manner; and  
3            reading pixels of the image sensor after they have been reset, wherein the  
4        pixels are read such that:

5                  (a) relative to a direction of progression across the image  
6                sensor, reading of pixels spaced from a center of the image sensor is  
7                delayed relative to reading of pixels adjacent the center of the sensor  
8                such that exposure time for pixels spaced from the center of the sensor  
9                is greater than for pixels adjacent the center of the sensor, and  
10                 (b) pixels are reset and read with a varying relative speed of  
11                progression such that a pixel reading rate is higher adjacent the center  
12                of the sensor as compared to adjacent edges of the sensor.

1        16. The method of claim 15, wherein resetting pixels further comprises  
2        resetting pixels beginning from one edge of the sensor and ending at an opposite edge  
3        of the sensor.

1        17. The method of claim 15, wherein resetting pixels further comprises  
2        resetting pixels beginning from the center of the sensor and ending at opposite edges  
3        of the sensor.

1        18. The method of claim 15, wherein reading pixels comprises reading  
2        pixels such that pixel exposure time increases as a function of distance from the center  
3        of the sensor.

1        19.     The method of claim 15, wherein pixels are reset and read such that  
2     exposure times are increased for the sensor pixels as a function of their distance from  
3     the center of the sensor in both a horizontal and a vertical direction.

1        20.     A system for counteracting lens vignetting, comprising:  
2              a solid-state image sensor including a plurality of randomly-accessible pixels;  
3              and  
4              logic configured to read sensor pixels after they have been reset such that the  
5     time between resetting and reading is greater for pixels adjacent edges of the sensor  
6     than for pixels adjacent a center of the sensor.

1        21.     The system of claim 20, wherein the image sensor comprises a  
2     complimentary metal oxide semiconductor (CMOS) sensor.

1        22.     The system of claim 20, wherein the logic is configured to read pixels  
2     in a manner in which pixel exposure time increases as a function of distance from the  
3     center of the sensor.

1        23.     The system of claim 20, wherein the logic is configured to read pixels  
2     in a manner in which reading of pixels spaced from a center of the sensor is delayed  
3     relative to reading of pixels adjacent the center of the sensor such that exposure time  
4     for pixels spaced from the center of the sensor is greater than for pixels adjacent the  
5     center of the sensor.

1           24.     The system of claim 20, wherein the logic is configured to read pixels  
2     in a manner in which pixels are reset and read with a varying relative speed of  
3     progression.

1           25.     A system for counteracting lens vignetting, comprising:  
2         means for collecting light; and  
3         means for reading the means for collecting light, the means for reading being  
4     configured to read such that an exposure time for portions of the means for collecting  
5     light adjacent its center is less than an exposure time for portions of the means for  
6     collecting light data adjacent its edges.

1           26.     The system of claim 25, wherein the means for collecting light data  
2     comprise a complimentary metal oxide semiconductor (CMOS) sensor that includes a  
3     plurality of randomly-addressable pixels.

1           27.     The system of claim 25, wherein the means for reading are configured  
2     to read the randomly-addressable pixels in a manner such that pixel exposure times  
3     increase as a function of distance from the center of the sensor in both a horizontal  
4     and a vertical direction.

1           28.     A digital camera, comprising:  
2               a lens system;  
3               a solid-state image sensor that receives light transmitted by the lens system,  
4               the image sensor including a plurality of randomly-accessible pixels; and  
5               a counter-vignetting algorithm that is configured to reset sensor pixels and  
6               then read the reset pixels in a manner in which the time between resetting and reading,  
7               and therefore pixel exposure, is greater for pixels adjacent edges of the sensor than for  
8               pixels adjacent a center of the sensor.

1           29.     The camera of claim 28, wherein the solid-state image sensor  
2               comprises a complimentary metal oxide semiconductor (CMOS) sensor.

1           30.     The camera of claim 28, wherein the counter-vignetting algorithm is  
2               configured to read pixels in a manner in which pixel exposure time increases as a  
3               function of distance from the center of the sensor.